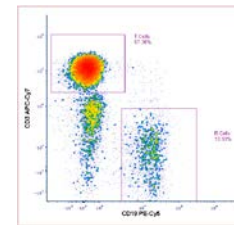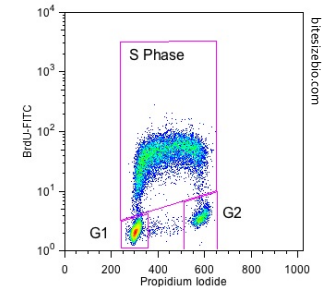# What is Flow Cytometry?

Flow Cytometry was probably the first high-throughput **single-cell analysis** technique to be developed, over 50 years ago!

Flow Cytometry measures the properties of cells and particles in a stream of fluid, allowing multiparametric analysis at a single-cell level. Fluorescently-labeled cells in suspension are run on flow cytometers where they pass in file, one by one, through one or more lasers of different wavelengths. Scattered laser light or emitted fluorescence are collected and transmitted through optical pathways and amplified/digitized for downstream analysis.
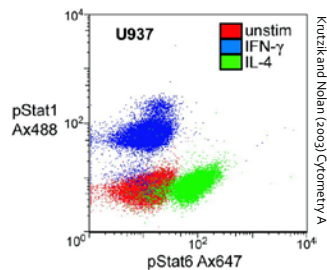
Immunophenotypying

Cell Cycle

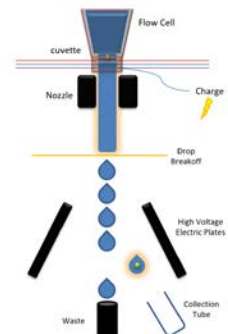**Phosphorylation**

Krutzik and Nolan (2003) Cytometry A
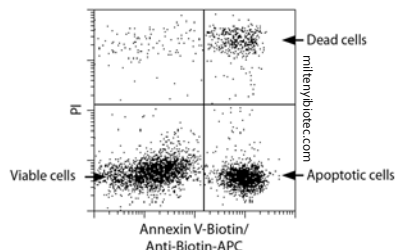
In **Cancer Research,**

Flow Cytometry can be applied to answer an assortment of different biological questions through a variety of applications that include the measurement of **DNA content**, **immunological phenotyping**, **cell death**, **proliferation**, **phosphorylation** and **RNA expression**, among many other parameters.

Cell sorters are an extension of this technology which allow for isolation of specific populations from heterogeneous samples for a variety of downstream applications, such as single-cell sequencing or in vivo studies.
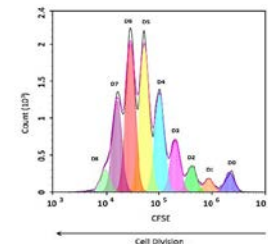
Cell Sorting

RNA Expression

thermofisher.com

Cell Death

miltenyibiotec.com

Multidimensional Analysis

Cell Proliferation

biocompare.com

Flow Cytometry Core Facility

https://fccf.mskcc.org

Memorial Sloan Kettering Cancer Center